

LATE REVISIONS  
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT  
SACRAMENTO REGIONAL WASTEWATER TREATMENT PLANT  
SACRAMENTO COUNTY  
NPDES Permit Renewal (NPDES NO. CA0077682)  
Regional Water Quality Control Board, Central Valley Region  
Board Meeting – 21 April 2016  
Agenda Item No. 11

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**Late Revisions to the proposed NPDES Permit.**

- 1) **Attachment E, Section IX.B.2, Sample Type – modify Table E-10 as shown in underline/strikeout format:**

**Table E-10. Effluent Characterization Monitoring**

Parameter	Units	Effluent Sample Type	Maximum Reporting Level <sup>1</sup>
Disulfoton	<u>µg/L</u> <del>ng/L</del>	24-hr Composite <sup>4</sup>	
N-nitrosomethylethylamine (NEMA) <sup>5</sup>	<u>µg/L</u> <del>ng/L</del>	Grab	
N-nitrosodimethylamine (NDEA) <sup>5</sup>	<u>µg/L</u> <del>ng/L</del>	Grab	
Temperature <sup>2</sup>	<u>°F</u> <del>°C</del>	Meter	

- 2) **Attachment E, Section X.D.5, Annual Pretreatment Reporting Requirements – modify item f as shown in underline/strikeout format:**

f. Semi-annual reports describing the compliance status of each SIU characterized by the descriptions in items iii through vii above shall be submitted by **1 August** (for period covering 1 January -30 June), and by **25 March** (i.e., included as part of the annual report) ~~4 February~~ (for period covering 1 July – 31 December). The reports shall identify the specific compliance status of each such SIU and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter covered period must be submitted. This semi-annual reporting requirement shall commence upon issuance of this Order.

- 3) **Attachment F, Section II.A.2, Future Facility – modify the second paragraph of the section as shown in underline/strikeout format:**

The design capacity of the future Facility will remain 181 MGD. Facility modification will include replacement of the existing pure oxygen biological treatment facilities with biological nutrient removal (BNR) air activated treatment facilities capable of removing ammonia and nitrate nitrogen, addition of tertiary treatment in the form of filtration with granular media filters, sidestream ammonia treatment, and the storage capacity of the ESBs A, B, C and D will be increased and ~~all basins will be lined~~. The Facility will continue to be staffed and operated 24 hours per day and will consist of influent pumps; septage receiving station; anaerobically digested material reception and storage facility; mechanical bar screening; aerated grit handling; grit classifiers that wash and dewater grit; covered primary sedimentation tanks; primary effluent pumping station and peak-shaving storage facilities (using ESBs for flow equalization); BNR air activated sludge treatment; nitrifying sequencing batch reactor for treating high ammonia concentration waste streams from solids storage basins and biosolids reclamation facility; secondary sedimentation; secondary

effluent screens; filter influent pumping station; granular media filtration; disinfection with chlorine liquid in a covered disinfection contact basin; and dechlorination with sodium bisulfite. Compliant effluent can be diverted to the lined ESBs as needed to meet effluent dilution and thermal limits before discharge to the river. Non-compliant effluent, primary influent or effluent, and raw wastewater can be diverted to the lined ESBs as needed for any reason including process upsets, or diversions for excess flows, and returned for additional treatment to the influent of the facility. Odors are controlled through biological fixed media scrubbers, scrubbing tower, chemical oxidizing towers, and carbon treatment towers.

**4) Attachment F, Section II.A.2,b, Future Facility – modify the section as shown in underline/strikeout format:**

**b. 1 November – 30 April (commences 1 November 2023)**

In the descriptions below, “filtered” means tertiary filtration of BNR effluent under filter operations consistent with the design hydraulic loading rate necessary to comply with the Title 22, or equivalent, disinfection criteria.

1. When the BNR effluent flow is 217 MGD, or less, measured as a daily average: The entire BNR effluent flow will be filtered.
2. When BNR effluent flow exceeds 217 MGD:

Up to 217 MGD will be filtered, and remaining wastewater will not be filtered. A portion of the filtered effluent may be reclaimed. The remaining filtered and non-filtered wastewater will be disinfected and combined with reclaimed water in excess of demands, prior to the disinfection ~~by the chlorination/de-chlorination facilities. Reclaimed water in excess of demands will be combined prior to the dechlorination facilities.~~

**5) Attachment F, Section IV.C.3.xii.(b), Pathogen, RPA Results – modify the second to last paragraph of the section as shown in underline/strikeout format:**

Construction of a smaller filtration system to treat a discharge flow of 217 MGD will allow the Discharger to fully filter the wastewater during dry weather, which would include the times when dilution is the lowest in the Sacramento River and when potential for public contact with the discharged wastewater is the highest, and additionally during most wet weather periods. The Discharger estimated that filters designed for 217 MGD, operated year-round, would provide tertiary filtration for approximately 97 percent of the annual wastewater flow discharged from the Facility to the Sacramento River<sup>1</sup>. At this filter design, between May and October the Title 22, or equivalent, disinfection requirements would be met. Between November and April, the filters would be operated to the 217 MGD design capacity. Treated wastewater effluent flows to the river or storage basins in excess of the 217 MGD design capacity would not be filtered, but would be of improved BNR secondary effluent quality with a reduced pathogen concentration relative to the current wastewater discharge. Unfiltered BNR effluent and filtered wastewater would be ~~combined and~~ disinfected and combined with reclaimed water in excess of demands, and ~~with chlorine and~~ dechlorinated prior to discharge to the Sacramento River. This combined discharge would occur at times when wet weather and other conditions minimize public use of the river, and high river dilution is generally available, minimizing any increased risk of public contact with wastewater pathogens. By allowing for construction of a smaller

filtration facility, the Discharger estimated savings of over \$100 million in capital and operational costs.

**6) Attachment I, Section I, Consideration of Thermal Plan Exceptions – modify the first, second, sixth, and seventh bullets in the section titled “Consideration of Thermal Plan Exceptions” as shown in underline/strikeout format:**

**First Bullet**

- **Continued exceptions would allow minor and transient exceedance of Thermal Plan objectives within a small zone.**

Exceptions would primarily be needed during three months of the year when river temperatures are below 65°F. This is the time of year when river flows are highest and ambient temperatures are low.

The thermal plume quickly assimilates in the receiving water so the thermal impacts are limited to the near-field plume that under worst-case flow conditions is contained in the vicinity of the diffuser. Due to requirements in this Order<sup>1</sup> the worst-case flow conditions occur infrequently and for only a matter of minutes at a time. Under typical conditions (flow ratio of about 46:1), Thermal Plan objective 5.A.(1)a would be met within about 100 feet of the diffuser. It is only within a portion of the plume near the bottom of the channel where the temperature differential required under Thermal Plan Objective 5.A. (1)a (i.e., 20°F temperature differential) is not always met. Even there, the 20°F differential is always met beyond about 10-20 feet downstream of the diffuser under typical flow conditions (i.e., 46:1) and beyond about 35-70 feet downstream of the diffuser during worst case flow conditions (i.e., 14:1). See Figures I-3a and I-3b, below for graphics depicting the thermal plume.

Under fully mixed conditions (far-field conditions) Sacramento River temperatures would not change measurably with or without the exceptions. In other words, in the far-field (within 3 miles from discharge point where the discharge is completely mixed) thermal impacts would be virtually the same if the Discharger were to upgrade to fully meet the Thermal Plan objectives, versus continuing to operate under the limited exceptions.

**Second Bullet**

- **There are no demonstrable negative impacts to any aquatic organisms when considering population level or local level impacts**

The thermal exposures in the near-field plume area and far-field downstream areas do not exceed lethal or sub-lethal effect thresholds for aquatic life. Studies have shown that Ffishes do not hold within the plume area for sufficient periods of time to experience thermal induced toxicity and similarly, floating organisms are exposed to elevated temperatures for only short periods. Depending on the river velocities, the thermal exposures range from approximately 3 to 33 minutes until reaching downstream river temperatures within 1-2°F of background temperatures.

### **Sixth Bullet**

- **Compliance with the Thermal Plan objectives would substantially increase the carbon footprint of the Facility for no demonstrable water quality improvement.**

SRWTP currently has an electrical power draw of approximately 12 megawatts (MW). To comply with the Thermal Plan objectives, it is estimated that an additional 70 MW would be SRWTP's needed at full load. This nearly 6 fold increase in power consumption would substantially increase SRWTP's greenhouse gas production and raise energy costs without demonstrable water quality improvements. The increased energy consumption is equivalent to the power needs of approximately 100,000 people.

### **Seventh Bullet**

- **State and federal fishery agencies provided technical assistance ~~do not object to allowance of exceptions~~**

The United States Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department of Fish and Wildlife (CDFW) (collectively, fishery agencies) participated during development of the 2013 Temperature study. In addition, USFWS participated in the development of the 2015 Delta Smelt Addendum.

Concurrence from the fishery agencies is not required for the Central Valley Water Board to grant exceptions to the Thermal Plan, however Central Valley Water Board staff requested technical assistance. The fishery agencies could not provide an official consultation, but have provided technical assistance and direction in the development and reviewing of the temperature studies ~~and do not object to allowance of the proposed exceptions~~. Letters have been provided by the state and federal fishery agencies documenting that the studies are complete, the scientific rationale is sound, and that no further studies are currently needed to evaluate the effects of the thermal discharge (See section II. 4. Permitting/Litigation History for details regarding the fishery agencies comments and recommendations).

- 7) Attachment I, Section I, Thermal Effects Studies – modify the first paragraph of the section titled “Thermal Effects Studies” as shown in underline/strikeout format:**

The Discharger has conducted several temperature studies at the request of the Central Valley Water Board and the fishery agencies to assess the thermal impacts of the discharge on aquatic life of the lower Sacramento River, including:

- 8) Attachment I, Section I, Thermal Effects Studies – modify the second to last paragraph of the section titled “Thermal Effects Studies” as shown in underline/strikeout format:**

Upon reviewing the 2013 study's conclusions, USFWS requested more information to append the 2013 study in regarding to a single listed species (Delta Smelt). ). The Discharger responded to this request with the 2015 Delta Smelt addendum. The 2015 Delta Smelt addendum assessed the potential direct and indirect effects of the thermal discharge on all delta smelt life stages such as adults, larvae, and post-spawn adults, and on delta smelt critical habitat. The study concluded that the

discharge "...would not cause lethality to individual delta smelt, result in chronic, adverse sublethal effects, adversely modify delta smelt critical habitat, prevent sustainability or recovery of the delta smelt population, or eliminate access to critical habitat primary constituent elements." The 2015 Delta Smelt addendum was developed to answer specific questions regarding Delta Smelt. As such, the addendum was never intended to answer all questions needed, but was intended to supplement the 2013 study findings.

**9) Attachment I, Section II.3, Characterization of the Thermal Plume and Science-based Findings – modify the last paragraph of the first bullet as shown in underline/strikeout format:**

The period during which an exception to Thermal Plan objective 5.A.(1)a is needed is primarily October through March, with the greatest need occurring when the river temperature drops below 65°F (typically during November through January) as shown in Figure I-2b.<sup>2</sup> The thermal plume quickly assimilates in the receiving water so the area of thermal impact is small. ~~For example under typical flow conditions Thermal Plan objective 5.A.(1)a is met within about 100 feet of the diffuser.~~ It is only within a portion of the plume near the bottom of the channel where the temperature differential required under Thermal Plan Objective 5.A.(1)a (i.e., 20°F temperature differential) is not always met. Even there, the 20°F differential is always met beyond about 10-20 feet downstream of the diffuser under typical flow conditions (i.e., 46:1) and beyond about 35-70 feet downstream of the diffuser during worst case flow conditions (i.e., 14:1). Graphical depictions of the impact area can be seen in Figures I-3a, I-3b, I-4a, and I-4b, below.

**10) Attachment I, Section II.3, Characterization of the Thermal Plume and Science-based Findings – modify the seventh bullet as shown in underline/strikeout format:**

- ~~State and federal fishery agencies provided technical assistance do not object to the allowance of exceptions~~

Concurrence from the fishery agencies is not required for the Central Valley Water Board to grant exceptions to the Thermal Plan, however Central Valley Water Board staff requested technical assistance. The fishery agencies participated during development of the 2013 and 2015 Temperature studies. The fishery agencies technically assisted the Discharger in developing the proper goals, questions, and objectives to be addressed by the Temperature Studies, and to design the field study elements to obtain the needed information for the study questions.

After the Temperature Studies were completed, the fishery agencies provided technical assistance for the review of the studies ~~and do not object to allowance of the exceptions.~~ See section 4. Permitting/Litigation History for details regarding the fishery agencies comments and recommendations.

**11) Attachment I, Section II.3, Figure I-3a, Figure I-3b, Figure I-4a, and Figure I-4b– corrected typo of “dilution ration” to “dilution ratio” in the figure titles.**